Of These the Entitler and the Copperhead Atone Are Poisonous-How to Tell a Poincous Stanks from the Rite Pecult.

Artifice of the Rattlemanke-How the Stackmanks Hunts for Food-Pacts for warning, and found them to vary from sixty to eighty per second.

acteristics of the wild snakes to be found in and near the Greater New York.

At the Museum of Natural History it was sail that only fourteen kinds of snakes can be found at large in the vicinity of this town. of which two are poisonous. They are: The banded rattlesnake. The copperhead. The water anake.

The blacksmake he worm snake. he ring necked snake. The pilot spake. The greenstake

The brownsnake.
The red-belifed snake. The bog-nosed snake. The milk snake. The ribbon snake. The two that are poisonous are the banded rattlesnake (Crofalus horridae) and the copper-

head Ancistration confortries. Both are some what rare, but not a few rattiers have been westers Connecticut from year to year, while two were killed at Fort Lee Heights last summer. The comperheads are more numerous than the rattlers, probably because they are less readily distinguished from hermless varieties and are therefore pursued with less vigor, when seen, then the rattlesnake. Not very many people have a nervous tem-

perament that will permit them to handle reptiles of any kind, but fortunately there are a few who find real pleasure in a study of even the most deadly varieties. These naturalists have learned a good many things about the tattlers and copperheads that are of interest to naturalists only, and some things that ought to interest everybody.

For instance, every one who goes where makes are to be found ought to be able to tell readily a poisonous snake from a harmless one. In the case of a person bitten by a snake this knowledge is of such great importance that life is likely to depend upon it. Moreover, the slaughter of at least two kinds of harmless snakes found near New York is not only a needless destruction of innocent life, but it actually gives the poisonous snakes a better The common blacksnake chance to multiply. of forest and field and the milk snake so efter seen about houses and dairies are the most destructive natural enemies of both rattlers and copperheads known to this region.

The amateur herpetologist when beginning his studies ought to be able to recognize the

and rattiesanke found in this region by its color, for it is of a sulphur yellow with dark brown bands that sigzag across its back. However, the ground color of its back is sometimes of a reddish gray and sometimes such a dark brown that at first glance the whole reptile seems to be black. In all cases of mature snakes the tail is so glossy and velvety and the summary of the state of the summary of the summa

obvious, of course, that this very friendliness makes it all the more dangerous under some circumstances.

It is not a smake to chase a victim. It has a striking range on a level of about half its length, and if it miss on the first stroke it merely coils for another blow, it in there is one feature of its stroke well adapted to give the wayfarer a chill even when no han is done. So powerful are the mustles compress by the poison gland that cases where the ventom has been else fed to a distance of from the formal see issent recorded. No nervous person would care to be within range of the ventom even if it are harmless where it handed, still arother peculiarity of the snake has been observed it can strike in most victous fashion even after the head has been orities out off, if any one doubts this te him chap off the bead of the next rattler he case and immediately afterward place its region is from mediately afterward place its region is from

ediately afferward pinch its tail with his gers.
The mature rattler of this region is from ree to four feet long. He ormes into the orld fully armed and ready for life, his size birth being from nine to ten inches long and half fuch in diameter.

I will interest some of the provincial snake educate to the first half end in the New York Massau Natural Histor have definitely determined at there is no connection whatever between a number of burding on the first all and a number of years of his life. A new but in is developed early time the snake sheds its in and sometimes when the skin is not shed, as stake sharp who kent rattlers for study

found one of his pets had developed seven buttons in street months and in early youth they added new buttons at the rate of one every two months. But the snake with more than offeen or cighteen buttons to he rattle is a rarity for the reason that the buttons arrive for the reason that rhe buttons arrive for the asserting the reason with head and tail up," but occasionally the rartie gets mught and is tuiled off, or it is pounded image in a fight. The greatest number of buttons of which there is an authentic record is twenty-five.

THE COPPERSEAD.

Now that the season of pionics and other outings is at hand, it is certain that many readers of The Sux will make more or less extended observations, not to say studies, in herpetology. These observations will be in almost all cases involuntary, wholly unexpected, and exceedingly brief, but paradoxical as it may seem, the impressions made are fall cases at once deeper and more listing than any other observations made in natural history, unless, indeed, the observer be a special out for study rather than for receation it is therefore not unlikely that the following facts, gathered from the city's herpetologist at the Museum of Natural History in Central Park, and from other sources, may prove of special interest at this time. Perhaps it will add to the interest of the small proportion of The Sun's readers who are not well versed in natural history to explain first of all that the writers who make aspecialty of herpetology (especially those who write for provincial newspapers) are commonly known as snake editors.

If there is any reader who would like to make something more than the usual brief and fearful observations of reptiles, this will tell briefly something of the more interesting characteristics of the will snakes to be found in and near the tireater New York.

The copperions is hazel brown on the back and planksh on the belly. On each side the theury-she thesity of each tity the early linksh on the belly. On each side the theout very fine to the unity of the head is hazel brown all inside and inner the said that somety-style are from intred to up and almost that somewhat resemble are from inverted V. Hie head is the said that somewhat resemble are from inverted V. Hie head is head are cream colored. The directory in the dark points. The copper of the top passes through the tip break of his head are cream colored. The directory the few of his head are cream colored. The directory the few of his head are cream colored. The directory the few of his head are cream colored. The directory that head are cream c

proved fatal. However, that was probably because the doctors were not so eager to report their failures as their successes for the benefit of science.

The favorite food of both the rattler and the copperhead is the mouse. Both capture their prey by striking with the fanges—they poison their food to death before eating it.

The common notion that these snakes commit suicide by biting themselves when cornered and tortured is declared to be nonsense by the scientists who have experimented by interting prodigious doses of venom into the bodies of caged reptiles. Moreover, there are other snakes—harmless ones who are not injured by the bits of either rattler or copperhead, the black snake and the milk snake being among the number. The amateur herpetologist may easily experiment with the suicide theory if he find one of the poisonous snakes by securing it with a forked stick first and then with a lasso or snare that will leave it some freedom of movement.

The most interesting fact learned in recent times about poisonous snakes has been mentioned recently in Title Sun, and that is the fact that by repeatedly inoculating rabbits, horses, &c., with the venom of poisonous snakes, the animal will eventually become snake-bite proof. In turn, the serum from the blood of the inoculated beast is found to be an antidote for the venom. More interesting still is the fact that the venom, which may be swallowed by a heaithy man with impunity, renders the swallower proof against the injected venom. This fact having been demonstrated by experiments on animals, the scientists then recalled the fact that travellers had told of some African aborigines who were not hurt by the bits of deadly serpents, and that the aborigines were in the habit of drinking the venom of the snakes they killed.

It is a matter well worth the consideration of all practical herpetologists, for in spite of care there is always dancer of a bite from even their most docile rets. The late Prof. Haird tells in one of his interesting works that he once swallowed

low stripes would be a net with people were it not for the instinctive fear of all servents which human beings have inherited from remote ancestors living in prehistoric coochs when the human struggle for life was fiercest because of the more powerful reptile enemy.

The amateur will certainly fail to distinguish between the black snake properly so called, the pilot snake, and the water anake because all are black. But the real black snake has smooth scales, while the pilot snake instead shake has smooth scales, while the pilot snake instead and the water snake will be found hanging in the trush over a pool or stream waiting for frog and fish, where the others will stick to the land and live on warm blooded animals instead of cold-blooded. The light gray snake with a vellow ring around his neck is the ring-necked snake and not at all a had fellow. His food is chiefly worms and be ought to be encouraged where worms are destructive. The red-belled snake with his vermilion under parts is another fellow of the same sort, but he is usually mistaken for the pink-bellied copperhead, and so is hunted feroclously.

Very likely the brown snake should be killed by those who cannot distinguish him from the copperhead. His belly is also pink, but he has none of the dark side markines nor the cream colored cheeks of the pulsoonus variety.

Last of all is the hog-nosed snake, a brown ish gray fellow with dark bends. He is the most villainous fraud in snakesiom. He puffs and blows and flattens his head and strives to make the beholder surnose he is a copperhead and the wickedest of the trive. But when it comes to real fight he le like the human beings who by brag and self-glorification try to impress their fellow beings with their greatness. They show themselves only ridiculous.

THE CLIFF RUINS OF COLORADO. A Region of Especial Interest to Students of the Prehistoric. From the Denver Field and Jarm.

The cliff ruins of the San Juan and the Mancos have been the centre of attraction, have been viewed from all sides, and their wonders have been told and retold to the world time and time again. Scientific men have visited the region, have penetrated southwestern Colorado, and have considered that section a place of especial interest, because the cilif and cave dwellings are probably the oldest in this strange iand, being the first built in that misterious journey southward of a great but unknown people. For twenty years the prospector has followed the san Juan River and gized with careless unconcern on the rough and broken waits, so full of interest to the archeologist. But the mind of the prospector has no room for curies, and he has no time for archeologist. But the mind of the prospector has no room for curies, and he has no time for archeologist. But the mind of the prospector has no room for curies, and he has each the glitter of the gold in the sant, and thinks only of the time when he shall have made his stake. In November of 1832 handgreds of gold honters rushout madly into the canon north of the Navajo Mountain, travelted 360 miles over hiese, desert tablelands, suffering terriby from the cold, hunger, and the inig, wearsonne journey. In a few days they had staked off all the available land for fifty miles up and down the river, and then returned home without having obtained as much as a color of gold, and forday have onling to show for it but the stakes. It is one of the inest wildly pattersure and becautiful regions in the word. The steak old Navajo Mountain, rises abruptly and towers like a grim sentinel over the surrounding means, while in a cahon gorge, nore than 1,000 fact below its base, the file San Juan appears like a silver thread. The word is several miles wide, and a descent can be under to the river and promote the united surrounding incess, while in a cahon gorge, nore than 1,000 fact below its base, the file San Juan appears like a silver thread. The cahon is several miles wide, and a descent can be under to the river and promote the grand and the surrounding in the file of the surrounding in the productor and amount, on the river and proposite in the most file of t time again. Scientific men have visited the region, have penetrated southwestern Colorado.

see the land growing old they will appreclate what is left, the solid earth, the result of a process in the past that is still going on to day Form to-day is not what it was yesterday. There is the difference of a day's change, and my idea is to attempt to bring out clearly to my students the form producing process. We look at form, the result of process, and know that process is working; we read form from process rather than from rocks.

"Taking form as the result of activity, on it we find certain conditions. There is always a definite relation between rivers and hard and soft rock. A river attempts to follow soft rock until it becomes adjusted. Little streams follow soft rock; master streams cut across everything. It the rivers of a country are not adjusted the land has a short history. The students gained much practical knowledge on these points on the excursions that we've made, and at Meriden we want to see the re-

on these points on the excursions that we've made, and at Meriden we want to see the relation between geographical form and geological structure."

Miss Lathrop, who was graduated from the college a year ago, is one of Prof. Bodge's most enthusiasti, students. She is a slim, girlish-looking little woman, and fools every one badly if she is out of her teens, but she is teacher of the sixth grade in the Horace Mann School, and is doing successful work. "I've been on every one of the excursions," she said, "and what do you think? Nobody could ever guess. I've seen the actual forms of nature in action, and have realized from seeing the action that our present topographical features are the result of past action which has been similar. Seeing this has aroused a very keen interest in the subject. It has made me realize the life of all the forces of nature and the interaction of those forces. It has enriched all of my little journeys, even my walks to and from the college, because I now understand so much more of what there is and the reason for the forms being what they are. "Prof. Dodge's belief is that geography is the result of just action which is going on at present all around us, and every single girl, man, or woman who has been on even one of these excursions believes so, two, now, for they have seen proofs and evidence sufficient even in three short trips to convine them. I've been attending his lectures all the lear, and in them he has given us the thour and the principles and the actual results in a good many cases.

That merely class-room work. To help it but he had no idea that he just missed making a great discovery—the discovery that he had made imment proof for a considerable time of the other snakes to be found in and a round New York undoubtedly the milk snake and the black snake are at once the most use full and interesting. People are often heard to say plously that without doubt everything was created for some good and wise purpose, but—but they can't see for the life of them what good there is in a snake. As a matter of a fact both milk snakes and black snakes are more efficient destroyers of mice and inacts that injure the farmer's crops than any cas's, territers, trans, or poisons known to the agriculturists. And lowers of birds have good there is not snake around the house or dairy viciously clubs the thing to death and spends a dollar and a half for traps and voluntarily reds a quart of milk a day to a brood of cats when the casts and traps together cannot help him so much as the ashan grays serpent would have done. And the story that he milks the cows is a slandrouselle, of course.

In fact, all the fourteen erreents four inserts, though this is not to say the tosisonous snakes alound not be exterminated.

Of the other non-poisonous varieties, perhaps the most interesting, just now, is the little ground to feed on insects and spends at this time of the year because he bores in sway through the earth for most of his life, feeding on anglescornes.

The worm snake is rarely seen because he sore is sway through the earth for most of his life, feeding on anglescornes.

The common garter snake with the three short in the shoot five say the common garter snake have inherited from the shoot of his life, feeding on anglescornes.

The common garter snake with people were it is a most infection that the proof of the common garter of all services the common garter of all services the common garter of the gray servent would be a pert with people were it because the long of the proof of the common garter of all services the common garter of the gray servent the

GIRLS OF SCIENCE THESE.

OUTDOOR SIUDENTS OF GEOGRAPRY AND GEOLOGY.

They Ge with Frof, Dodge from Monteinite to the Water Gam and from Aveven to Meetigen to Apply the Theory They Learned in the Transcript Clare.

Geography and coology—that sounds in the students of a time to the Wave Gam and from Aveven to the limity charming. They say that it is far more interesting than the spiclest bit of fletion, and it must be, because those who know anything about it stand around it the corribors and discuss physical features, zerogrowth history. Grainage, and many other these who have any an electron to the corribors and discuss physical features, zerogrowth is the word of the corribors and the standard of the cor

much interested in baskerball as she had just been in talking of glacial deposits and rock strata.

Miss dillimore, a teacher in the Grammar School, has been applying the knowledge that she has gained from the excursions directly to her own class work.

"We base all political generachy on physical features," she said, "and while it is not much to know New Jersey or the Delauare liter, it is a great deat to understand them as one of a class. It is much easier to teach both geography and geology where we have practical field work. It makes it much more interesting to the tracher, and this enables her to bring it more charly to the understanding of her nupils. After going on one of these excursions I give the work in the school room. The day we visited Montclair we went on top of the tran rock and studied the plain below and the relation of the tran rock to the plain. Next we went to a quarry and saw the meeting of the tran and sand stone. When we went to the Delaware Water Gap we observed it from a distance and then went through the Gap and studied its formation. We had been studying geographical relations from books, and there we had a chance to study from the object instead. For instance, in studying the belaware River the teachers studied it as a type of a group, and our instructor made this so olain that I think the youngest student present understood it perfectly."

WOMEN, FREEDOM, AND PATRIOT. \$1,000,000.

Topics to Be Discussed at the Congress in Connection with the Cuban Fute.

The fortnight just passed has been a busy one in Assembly Hall, at Madison Square Garden. It is the headquarters of the Woman's Congress of Patriotism and Independence, which opens up for a week's session to-morrow night in connection with the Cuban-American Fair. Margherita Arlina Hamm is Chairman of the com-

We are in readiness for the opening session Monday evening," she said to a SUN reporter. Mrs. Donald McLean is President of the com-

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THE NEW EAST RIVER SPAN. ANOTHER OBSTACLE REMOVED BY

The Site of the New York End Penerically Selected Boring for the Foundations A Great Structure that Will Cost \$15,000,.

The new East Riverbridge took another long stride forward on Wednesday when Gov. Mor. ton signed the Austin bill, which enables the city of New York to swap off one piece of river front land for another at the bridge landing in this city just north of the Grand street ferry When the New East River Bridge Commission began the work of determining where to erect a bridge from the Grand street projection in this city to Williamsburgh, it soon be came evident that there was but one desirable location. On this end this was at a place having its northern line Just south of Delancey street, and running south for perhaps 150 feet. Part of this property, it was found belonged to the New York and Brooklyn Ferrs Conspany, and the law which created the Commission expressly prohibited it from taking any of the ferry company's property. The property needed was only a slip used for storing boats. and not for ferry purposes, but it was protected. Lying between this slip and the regular ferry slips at the foot of Grand street is the slip at the foot of Broome street, which belongs to the city. The Austin bill authorizes the exchange of this slip for the ferry company's slip. If the New York end of the bridge had been moved further north, as would have been necessary without this law, the bridge would have run diagonally across the river, and the increased length of the span would have swelled the cost at least

Starring accidents, the site for the bridge is now fixed. The New York pler foundation will stand at the spot designated, and just within the pier head line and the great anchorage for the cables will be built in the northern half of the block bounded by Delancey, Mangin, and Tompkins streets. It will occupy with its solid masonry almost the whole width of the block and about half its depth. On the other side of the river the pier foundation will stand out beyond the existing piers, but within the legal pier head line, between South Fifth and South Sixth streets, and the anchorage will be between these streets and Kent and Wythe avenues. opposite the end of Dunham place. The

A MAINE GHOST STORY.

Tankee Facts Decorated with Telmmings

many promising amateur liars among the nch Canadian residents of Maine, whose inthence has greatly improved the dull imaginaens of their Yankee associates, until now, after 200 years of close companionship, even the most commonnace of truthful tales gains picturesque and poetle details that the original Puritan ancestors could never have constructed. The natural Yankee is of a plain, mathematical turn of mind. He gets up in the morning looking for dollars, and he can see no use for anything that falls to yield him a handsome dividend. The French Canadian mixes his finances with fighting and fredle, and reduces the profits of the savings banks by add ing materially to the revenues of the liquor dealers. Mingle these two races in such proportions as the conservatism of one shall control, and in a measure direct the effervescence of the other, and a student of political econ omy can eastly account for the vagaries of a prosperous down-East mill town. The mis-chief-making fatries of France and the firescorched witches of Salem meet in the nearb woods at sundown, and from then on until

scorched witches of Salem meet in the nearby woods at sundown, and from then on until daylight the forest is alive with all the strange demons found in the Druid and Latin tales. A firm belief in ghosts, and a deep-tooled faith in the prency of charms and spells, are hearly as widestread as the population, and the man who would deny the baleful effects of the evil eye would be looked upon as an onteast whose proper blace of residence is inside the walls of a madhouse.

The gigantic ghost of a bull terrier, which the French Canadians declare is roaming over Watson's farm, across the river in Bradiey, no doubt owes its birth to this novel combination of greed and superstition. A parsimonium Vankee farmer was killed while trying to overwork his hired men, and the French Canadians, hearing the story, have rigged it up and started if on a voyage that will not end until some new sensation comes to take its place. Watson owned a great hog farm in Bradiey that reached from the shores of the Penobscot opposite Webster clear out to the cranberry bogs and hear dens of Sunk blaze meadows. A few years ago, when the prace of hay was high and the water in the river was so low that several mills had to shut down, he lifted a crew of raw mill hands to help him get in his hay. He kept them raking, putting up, and getting in from daylight until dark, and then after sundown he would have them hitch the horses to the mowing machines and keep them cutting grass until midnight while he walked ahead with a lantern to show the way. One foggy night in July, when the moculines care raticing away in a thick meadow, some careless driver ran into old man. Wat

nied; that it armees the perceptive faculties like a vast astronomical hypothesis with the resplendent sequence of glorious achievement all scknowledge. The political effect, widely considered, of the enterprise involves a problem of statesmanship that so far has been only gingerly approached in the matter of detail. Aside from the desire to be rid of government by rural lawmakers which has been expressed over and again by fretful citizens, another purpose about which not much has been heard has actuated the projectors of the separate State, the desire to procure "home-rule" representation at Washington, in accordance with the enormous population of the territory here affected* Three million persons are entitled to have their peculiar wants considered when they unite to ask a hearing of their desires. When by reason of contiguity of residence and interrelation or dependence of pursuits they form & WEESTER, Me., May 23. There are very homogeneous community the justice of their demand for proportionate representation in the councils of the State will not in the abstract be denied. But three millions of people in something like one hundred square miles comprised in the Greater New York have only half as much to say in the higher legislative body at the national capital as 45,761 persons in Nevada. That was the population of that State in 1890. At the time of Nevada's greatest population, according to the Federal census reports, in 1880, she had only 62,266 inhabitants.

GREATER NEW YORK PARTISANS DREAM OF ONE TO COME.

The Multitude of People in the Greater City Have the Same Representation at Washington as a Handful of Western-

ers, and a Separate State Is Proposed, Extreme partisans of the Greater New York now propose the inauguration of a movement to make this great municipality a free and inde-

pendent State. The proposition, heard from

time to time in the conversation of the agetators or put forward in the new-papers when the rural legislators become unusually oppressive in their mandates relating to this city, awakers high appreciation or shocks the State pride of the conservative New Yorker, according to the habit of mind, the calling, and the personal

That the proposal is audacious none has de-

equation of the auditor.

Three millions of people here have only half as much to say in the same branch of the Congress as less than half a million people in Colorado. Colorado's population in 1890 was 412,198. In other words. Colorado has in the Senate six times the representation of the metropolitan community in the State of New York. The assessed valuation of property in the State of Colorado in 1890 was \$190,054,127,38. In the foilowing year the assessed valuation in the city of New York alone (the then New York) was \$1,785,857,338, or nearly ten times as great as that of the whole Centennial State. Colorado put out, according to her own estimate, seventeen and one-third million dollars' worth of gold from her mines last year, and one of her leading papers expressed just pride in it. New York city, without her new acquisitions, spends nearly \$10,000,000 a year in charities alone, including public and private contributions. Private charitable institutions here represent valuation of more than double the gold output

vate charitable institutions here represent a valuation of more than double the gold output of Colorado, or \$30,000,000. Nearly double the amount of Colorado's output of gold for last year is lying in one vault in New York—that of the Clearing House. The value of the enormous bulk of the foreign commerce of this city would probably make all the known contents of Colorado's mines look insignificant; yet a fifty-cents-on-the-dollar Colorado Senator has as much to say in modifying the appropriation for harbor improvements as the Senator representing New York.

The Greater New York has seven times the population of Rhode Island in one-tenth of the territory. In an area nearly 3,000 times that of the new greater city. Texas has less than 75 per cent of the population of the new municipality. The Greater New York has there-quarters of a million people more than the State of Massachusetts. California has only a little more than a third as many people as make up the population of the Greater New York, and all the mineral wealth taken from her mines since 1848 falls short of the assessed valuation of New York city by more than \$70,000,000. Haif a dozen years ago the cities of New York State had only about 30 per cent of the State's population. It was stated before the Senate Cities Committee last winter that the cities now have 71 per cent. On an estimate that the State's population. It was stated before the Senate Cities Committee last winter that the cities now have 71 per cent. On an estimate that the State's population has increased as much proportionately within the last five years as has that of New York city proper, the Greater New York has 40 per cent of the State's people. If the population of the Union were divided equally among the States, the new State of Manhattan would be entitled to one-forty-sixth of the whole. See would have within her narrow immits one-twenty-third of the whole. Her people now have one-nihetieth of the voice of the Federal Senate, when they should have, according to numbers, one-twenty